

**SYSTEM FOR SECURELY COMMUNICATING INFORMATION PACKETS**

**ABSTRACT OF THE DISCLOSURE**

A system for securely transmitting Real Time Protocol voice packets to a remote multimedia terminal adapter over an Internet protocol network. The system features an MTA (a local multimedia terminal adapter) having a key stream generator for generating a first key stream used for encrypting the voice packets. The remote multimedia terminal adapter receives and decrypts the voice packets. Also, the system includes a remote key stream generator for generating the first key stream in order to decrypt the encrypted voice packets and a packet decryptor decrypting the encrypted voice packets using the first key stream, wherein both key stream generators are capable of generating a second key stream to prevent reuse of any portion of the first key stream during the communication session.

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